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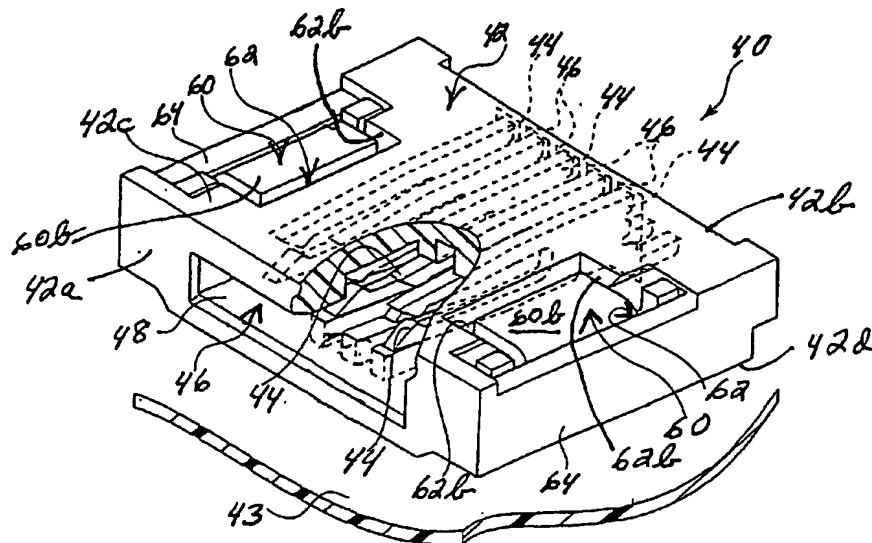
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(54) Title: ELECTRICAL CONNECTOR FOR INTERCONNECTING FLAT CIRCUITS



(57) Abstract: An electrical connector is provided for interconnecting a pair of flat circuits and includes a housing for mounting on a first flat circuit. The housing has a cavity for receiving a second flat circuit. A through passage extends from a top face of the housing through a bottom face thereof. A plurality of terminals are mounted in the housing along the cavity. The terminals have contact portions for engaging appropriate circuit contacts on the second flat circuit when the second flat circuit is inserted into the cavity. A reinforcing member includes a body portion inserted into the through passage in the housing from the top face thereof and includes a foot portion exposed at the bottom face of the housing for securing to the first flat circuit. The reinforcing member has a locking portion extending oblique to the body portion and engageable with a locking surface on the housing.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/26529

A. CLASSIFICATION F SUBJECT MATTER  
IPC 7 H01R12/20

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 319 052 B1 (CHANG JEN JOU) 20 November 2001 (2001-11-20)	1-11, 15-23
Y	column 2, line 44 -column 3, line 64; figure 2	12-14
X	EP 1 198 031 A (AUTONETWORKS TECHNOLOGIES LTD ;SUMITOMO WIRING SYSTEMS (JP); SUMIT) 17 April 2002 (2002-04-17)	1-7, 15-23
A	column 5, line 32 -column 7, line 28; figure 3	24-26
X	EP 1 198 032 A (FRAMATOME CONNECTORS INT) 17 April 2002 (2002-04-17)	24-26
Y	column 2, paragraph 11 -column 3, paragraph 13; figure 1	12-14
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Application No  
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 688 143 A (HON YU-MING ET AL)  18 November 1997 (1997-11-18)  column 3, line 35 -column 5, line 67;  figure 1</p> <p style="text-align: center;">-----</p>	1-26

# INTERNATIONAL SEARCH REPORT

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 6319052	B1	20-11-2001	TW	471718 Y		01-01-2002
EP 1198031	A	17-04-2002	JP	2002124329 A		26-04-2002
			EP	1198031 A2		17-04-2002
			US	2002045367 A1		18-04-2002
EP 1198032	A	17-04-2002	FR	2815480 A1		19-04-2002
			EP	1198032 A1		17-04-2002
US 5688143	A	18-11-1997	NONE			